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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,197	07/02/2001	Yoshimi Kudo	Q64874	8787

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EXAMINER

LE, HUYEN D

ART UNIT PAPER NUMBER

2643

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,197

Applicant(s)

KUDO ET AL

Examiner

HUYEN D. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 4 is/are allowed.
- 6) ☒ Claim(s) 1 and 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Allowable Subject Matter

1. The indicated allowability of claims 5-7 is withdrawn in view of the newly discovered reference(s) to Kawamura et al. (U.S. patent 4,478,309), Sakamoto et al. (U.S. patent 5,594,805) Kobayashi (U.S. patent 4,118,605) and Knowles (U.S. patent 2,295,483). Rejections based on the newly cited reference(s) follow.

The final rejection mailed 09/08/2004 is vacated, and the Amendment under 37 C.F.R. 1.116 filed 12/08/2004 has been entered.

Claim Rejections - 35 USC § 112

2. Claim 6 recites the limitation "the voice coil" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 8 rejected under 35 U.S.C. 102(b) as being anticipated by Barton (U.S. patent 1,713,210).

Regarding claims 1 and 8, Barton teaches a diaphragm body (26) that is made of metal, and an auxiliary diaphragm (4) that is made of paper. As shown in figure 2, the auxiliary diaphragm (4) is integrally bonded to a first part of the diaphragm body (26, also see page 1,

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lines 84-86), and the auxiliary diaphragm (4) is formed to cover only the center portion of the diaphragm body (26).

Further, Barton shows a second part (the outer surface) of the diaphragm body (26) that is not covered by the diaphragm (4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (U.S. patent 3,424,873).

Walsh teaches a diaphragm body made of metal (1 and see col. 9, lines 6-7), and an auxiliary diaphragm made of paper (32 and see col. 9, lines 4-6 and 8-10) that is integrally

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bonded to a part of the diaphragm body (also see col. 14, line 75 through col. 15, lines 1-2, and figure 8).

Walsh does not specifically teach that the outer configuration and the area of the auxiliary diaphragm are set based on the high limit frequency of the diaphragm to which the auxiliary diaphragm is bonded as claimed.

However, Walsh does teach that the vibratory energy absorption means (the low modulus material) at the larger end of the diaphragm body can be adjusted for the desired sound waves (col. 3, lines 4-18, col. 6, lines 36-42 and col. 9, lines 14-16).

Since Walsh does not restrict an area for the damping material; it therefore would have been obvious to one skilled in the art to provide any area and the outer configuration for the auxiliary diaphragm (having the low modulus material) of the Walsh diaphragm for better controlling and providing the desired frequency characteristics to the speaker system.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (U.S. patent 3,424,873) in view of Kobayashi (U.S. patent 4,118,605) or Knowles (U.S. patent 2,295,483).

Walsh teaches a diaphragm body made of metal (1 and see col. 9, lines 6-7), and an auxiliary diaphragm made of paper (32 and see col. 9, lines 4-6 and 8-10) that is integrally bonded to a part of the diaphragm body (also see col. 14, line 75 through col. 15, lines 1-2, and figure 8).

Walsh does not show a through hole for inserting a connecting cable at the portion as claimed. However, providing a through hole at the diaphragm for inserting a connecting cable to connect to a voice coil is known in the art.

Kobayashi or Knowles teaches a through hole in the diaphragm for connecting the voice coil leads (figure 2 in Kobayashi and figure 6 in Knowles).

Since Walsh does teach a paper auxiliary diaphragm that is bonded to the metal diaphragm (col. 9, lines 1-10 and col. 15 lines 1-2 and see figure 8); it therefore would have been obvious to one skilled in the art to provide a through hole on the diaphragm (1, 32) of Walsh for inserting the voice coil leads, as taught by Kobayashi or Knowles, for providing a better connection of the voice coil leads to the terminals.

Walsh further does not specifically teach a feeder portion that can be made of the paper of the auxiliary diaphragm. However, providing a feeder portion or a grommet to be made of paper is known in the art.

Since Walsh does teach that the diaphragm is made of paper; it therefore would have been obvious to one skilled in the art to provide a feeder portion or a grommet on the diaphragm (1, 32) of Walsh in view of Kobayashi and Knowles to be made of paper for the flexibility and providing the same paper material to the diaphragm.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (U.S. patent 3,424,873) in view of Suzuki et al.(U.S. patent 4,395,597), Kawamura (U.S. patent 4,478,309), or Sakamoto (U.S. patent 5,594,805).

Walsh teaches a diaphragm body made of metal (1 and see col. 9, lines 6-7), and an auxiliary diaphragm made of paper (32 and see col. 9, lines 4-6 and 8-10) that is integrally bonded to a part of the diaphragm body (also see col. 14, line 75 through col. 15, lines 1-2, and figure 8).

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Walsh does not specifically show a cylindrical portion at the center of the diaphragm (1, 32) as claimed. However, providing a cylindrical portion at the center of the diaphragm for connecting to a voice coil bobbin is known in the art.

Suzuki (figure 11), Kawamura (figure 1) and Sakamoto (figures 2-8) show a cylindrical portion at the center of the diaphragm for connecting to a coil bobbin.

Since Walsh does show a coil bobbin (13) that is integrally formed at the center the diaphragm (1, 32, figures 2 and 8); it therefore would have been obvious to one skilled in the art to provide a cylindrical portion at the center of the diaphragm or the auxiliary diaphragm (1, 32) for providing a better connecting of the diaphragm to the voice coil bobbin.

Allowable Subject Matter

9. Claims 3-4 have been allowed.

Response to Arguments

10. Applicant's arguments with respect to claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (703) 305-4844. The examiner can normally be reached on 9:30AM-6:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL

February 18, 2005



HUYEN LE
PRIMARY EXAMINER